




RESEARCH AND DEVELOPMENT DIVISION TECNILAB GROUP ITALY

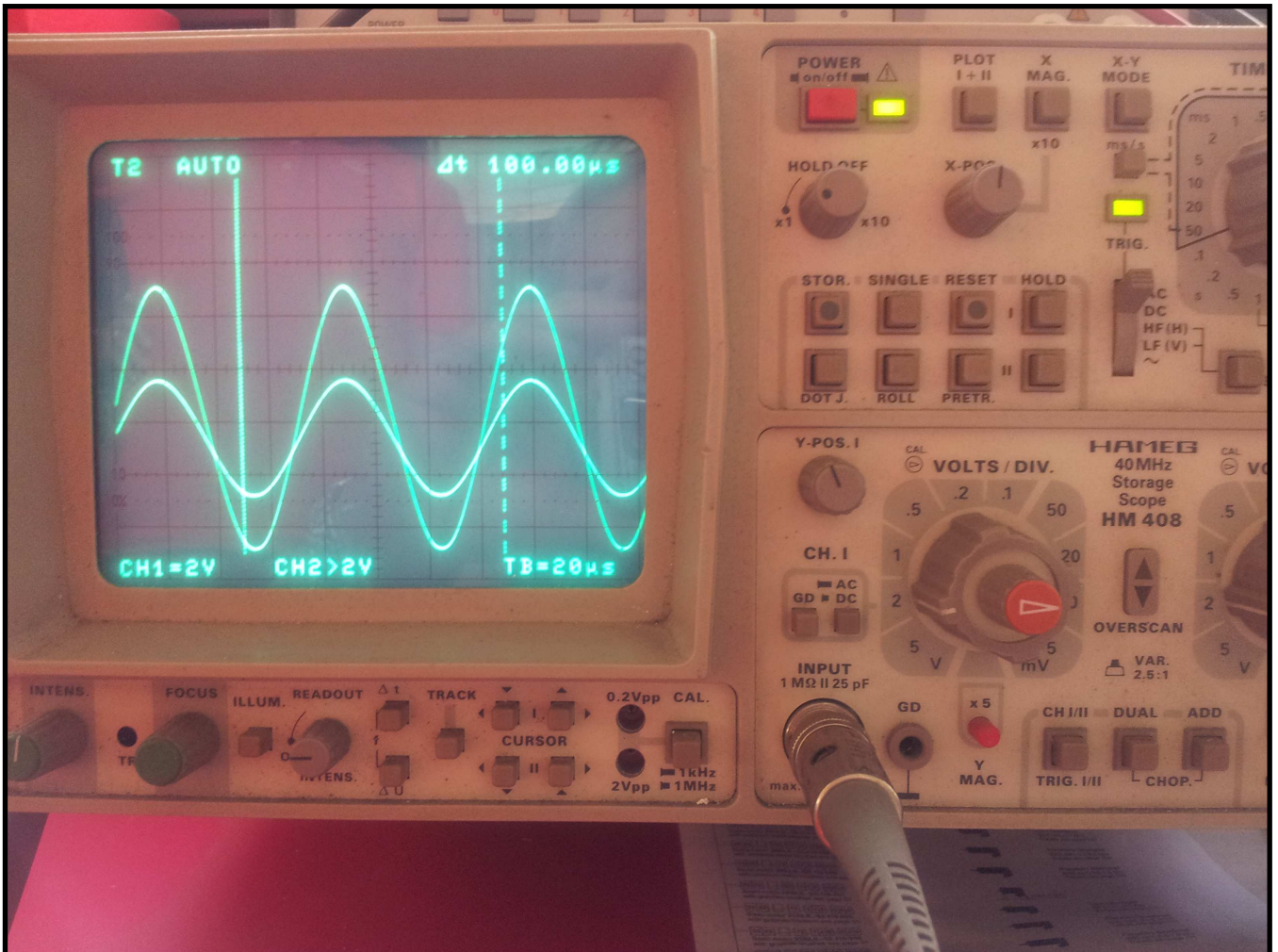
Measuring Test
Frequency response

For this measuring test, we have used the equipment concerning Idl Digital Lab and in particular the main Idl Audio Hub connection, 2 student panel UAR, professional headset with Microphone HP2010 and a standard Switch Ethernet 8 ports fast Ethernet 100 Mb.

Item picture	code	Major technical features
	<p>IDLHUB</p>	<ul style="list-style-type: none"> • POWER IN 230V.ac +/-10% 50Hz OUT DC +3+12 +/-5% 20A. • COMMUNICATION Data bus communication Standard serial RS232-9600 N81. • CONNECTIONS RJ45 connection available with 3 configuration 1-28 students, 1-44 students, 1-60 students. • INPUT/OUTPUT N. 2 headsets connections (OUT) N. 1 VHS/DVD (IN) N. 1 HI FI CASSETTE L/R (IN) N. 1 HI FI CASSETTE L/R (OUT) N. 1 AUX (IN) N. 1 AUX (OUT) N. 1 AUDIO BOARD (IN) N. 1 AUDIO BOARD (OUT) N. 1 EXT. SPEAKER (OUT) Dimension: 63X29,5x9 Cm. LxWxH Weight: 9 Kgs.

Item picture	code	Major technical features
	<p>UAR STUDENT DIGITAL PANEL</p>	<p>Student Audio Panel With: n. 02 mini din connectors for headsets n.01 RJ45 connector for line and power supply n.01 RJ45 LAN connector n.01 call button for student power: 12 V given by the telephonic cable 8 wires connected in the IDL AUDIO HUB. Case available in plastic or Metallic. Dimension: 20x15x4 Cm. Weight: metallic case 0,8 Kgs. Plastic case: 0,2 Kgs.</p>
	<p>HP2010 PROFESSIONAL HEADSET WITH MIC</p>	<p>TECHNICAL DATA Impedance 200 Ohm Frequency Response: 40 Hz – 14 Khz (- 10 dB) Microphone : Unidirectional flexible Type Impedance 1K Sensitivity : 8 Mv/Pa, 1 Khz/1M Weight: 0,650 Kgs.</p>

We would like to highlight the fact the our Digital system manage 2 separate networks, the first one manage the real time communication between teacher and students and students/ students, and the frequency response is from 30 Khz, as shown in the below picture, in the oscilloscope we have used to make the tests. One oscilloscope has been connected to the Idl Audio Hub Out, and one oscilloscope has been connected to the student's headset IN connected to the UAR student's audio panel.



As you can see from the oscilloscope images 2 channels were monitored one from Teacher and one from Student, by means of this image, we can declare that in the range of 30 Khz, the communication between teacher and students is adequate for a language/teaching learning environment.

We are available for any further comparison with similar system in order to check the audio quality "on live".

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